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EMSC RECOMMENDATIONS FOR ILLNESS AND INJURY PREVENTION

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EMSC RECOMMENDATIONS FOR ILLNESS AND INJURY PREVENTION

1. Prevention is an essential component in the continuum of pediatric emergency and critical care. As EMS-EMSC Systems mature the prevention component will have the greatest impact on reducing mortality and morbidity.

2. EMS-EMSC prevention activities should include both illness and injury.

3. A systems' approach should be utilized to plan and implement the Prevention component as has been done for other EMS-EMSC components (Appendix A).

4. Local EMS Agencies should develop the EMS-EMSC prevention component by coordinating efforts with other state and voluntary agencies involved in illness and injury prevention (e.g. EPIC & MCH, OTS, Safe Kids AAP, Red Cross, etc).

5. The California EMS Authority should encourage local EMS agencies in the development of local prevention plans that are based on local needs and resources and are coordinated with other local agencies involved with prevention.

6. A linked uniform data set for EMS-EMSC systems that links all phases of care (e.g. prehospital, hospital rehabilitation) should be developed, that defines the circumstances of the emergency. Data elements should describe the injury or illness agent, the host and the environment as well as the nature of the injury or illness, so that the data can be used for illness and injury prevention strategies.

7. All EMS-EMSC providers should have knowledge and skills in injury and illness prevention.

8. Prevention education should be a module in the formal educational program at every level of the EMS-EMSC system, including first responders, EMTs, nurses, ED physicians, critical care specialists and rehabilitation specialists.

9. EMS-EMSC prevention activities should target common serious injuries and illnesses determined by local data and utilized proven interventions (Appendix B).

10. Evaluation of the effectiveness of illness and injury prevention programs should be part of EMS-EMSC quality improvement, and include outcome data.

11. Specific areas for EMS-EMSC system improvement in prevention include recording of circumstances-of-injury data collection on the prehospital care record, and use of trauma registry, and E-coding in the ED.

APPENDIX A

The Systems Approach to Injury Prevention

Injury control demands a systems approach because of the very nature of the multiple, concurrent actions that must be taken together by both individuals and agencies. It demands an approach that systematically analyzes the agent, vector, host and environment, and the potential options for intervention. Injury control requires a coordinated effort by many segments of a community and by individuals themselves. To accomplish this task a lead agency must create a planned program in which a target injury is identified, the epidemiologic factors analyzed and specific targeted strategies selected, implemented, and evaluated.

A systems approach to injury control consists of taking the same steps that have been used in infectious disease control, emergency medical services system development and in non-health related areas in industry.

It consists of the following phases:

Initial Analysis:

The injury problem is defined.
The need to take action is established.
Target injuries are identified.
A goal is determined.

Design:

Additional data is collected.
Target injuries are made specific, e.g., burns due to scalds from hot liquids in the kitchen.
Target populations are selected, e.g., children 1 to 4 years.
Epidemiologic factors (agent, vehicle, host

environment) are analyzed.
All potential strategies are systematically considered and selected using Haddon's Matrix. (27)
A model is conceptualized.
An implementation plan is established.

Development:

Existing prevention activities are determined.
Key decision-makers are identified.
Commitments are obtained.
Intervention strategies are revised.
Protocols are established.
Tools (e.g., materials, legislation, regulations) are created.
Funding is obtained.

Implementation:

Designated agencies and individuals implement the program.
Tools and protocols are utilized.
Technical assistance is provided.
Monitoring of activities is accomplished.

Evaluation:

Key measures of compliance and outcome are determined.
Evaluation is carried out.
Program revisions are made.

SYSTEMS APPROACH TO INJURY PREVENTION

Step One: Gather and Analyze Data

! Good data will justify your program, help you develop effective intervention, and create a basis for evaluation.

! You should use existing data as a first step, then collect additional data only as needed.

! It is important to understand the data you analyze. For example, the category "motor vehicle injuries" frequently combines motor vehicle occupant, motorcycle, bicycle, and pedestrian injuries. To assume "motor vehicle injuries" refers solely to motorized vehicle crashes would be erroneous and might lead to the development of an occupant safety program that does not address the problem as a whole; for example, pedestrian injuries.

Step Two: Select Target Injuries and Population

! Targeting uses time and money efficiently, defines preventive measures, identifies resources, and clarifies objectives for evaluation.

! Factors to be used in selecting a target injury and population include:

- -Does the injury result in severe disability or death?
- -Does the injury require a high rate of medical attention?
- -Does the injury result in high societal costs?
- -Is there an effective intervention strategy?
- -Is there community/agency desire to prevent the injury?
- -The more specifically you can define the target injury and population, the more successful your intervention program will be.

For example:

Target Population: Parents of children ages 0-4 years of age.

Target Injury: Scald burns in the kitchen due to hot liquids.

Step Three: Determine Intervention Strategies

! A variety of techniques can be used to develop potential intervention strategies. The results of these techniques point to three major strategies: Legislation/regulation (which may include litigation), technology and education.

! These strategies are most effective when used in combination. For example, effective use of child car seats requires a combined effort of all three strategies:

Technology: To develop and produce car safety seats.

Legislation: To require the use of available safety technology.

Education: To create the need for technological development of car safety seats, legislate their required use, and inform parents and caregivers of the legislation and of the new product available.

Step Four: Develop an Implementation Plan

! Establish specific and measurable goals and objectives that can be used to guide and evaluate the intervention selected.

! Develop a methodology to accomplish and evaluate goals and objectives, and

establish a timeline.

! Identify resources needed to carry out the method developed. The resources needed may transcend the capability of any person or agency, but may be feasible for a coalition of several groups.

Step Five: Identify, Select and Commit Community Agencies and Individuals to Implement Plan

! Agencies selected must be credible, have a parallel mission and an organizational structure conducive to the plan's implementation. For example, the American Academy of Pediatrics' TIPP Program has pediatricians as counselors for their injury prevention program because credible, systematic health supervision is an essential component of pediatric care, and preventative health visits provide the opportunity for reinforcement and followup of prevention messages.

Step Six: Develop Protocols and Materials

! Clear, written protocols define the role and activities of each agency/individual implementing the intervention plan, and facilitate implementation, training and evaluation.

! Educational materials need to convey simple, targeted messages that are easy to read and follow.

! Model regulations are useful as a standard upon which to base legislative and regulatory efforts.

Step Seven: Orient and Train Agencies/Individuals Implementing the Intervention Plan

! Review protocols and materials. Give specific hints on how to implement the program, and consider all comments and feedback.

Step Eight: Implement Program

Step Nine: Monitor and Support

! Meet frequently and regularly with agencies/individuals who implement the intervention plan. Provide feedback on the status of the interventions, hold advisory meetings, provide technical assistance as needed, listen carefully to suggestions and incorporate changes where appropriate.

Step Ten: Evaluate and Revise the Program

! Evaluation data can be used to convince funding sources and the community of the value of your program, can advance the state of knowledge in the injury control field and is invaluable in revising your prevention program to increase its effectiveness.

! When you conceptionize your evaluation, answer the following questions:

-What is the program designed to do?

-Are we doing it?

-Is it making a difference?

-Evaluation must be an integral part of the program. Data need not be too complex or difficult to collect, but must help you determine the effectiveness of the program.

Over time we have learned some valuable lessons about the key elements of an effective injury prevention program. They are as follows:

-Leadership at the public health and medical level is essential for a successful program. The individual identified to provide the necessary leadership must have the professional and personal credibility, political know-how and conceptual and interpersonal skills.

-Successful programs have targeted their efforts. They are concerned with a specific injury type, for a specific population, using a defined intervention strategy implemented by specified agencies or individuals. For example, motor vehicle occupant injuries among children 0-4 years old, focusing on car seat use via legislation, education and enforcement, implemented by pediatricians, hospital discharge personnel and law enforcement officers.

! Successful programs have used a combination of legislation/regulation, technology and education. For example:

-reduction in aspirin deaths in children under 4 years old through the use of child-resistant

packaging.
-reduction of infant strangulation deaths by decreasing the spacing between crib slats to less than 5.5 cm.
-reduction of fire deaths through the use of smoke detectors.

! Media campaigns aimed at the entire population may increase awareness but rarely lead to preventive action. This is especially true if no specific action steps are given or the action steps are general in nature. For example:
-*"Child-Proof Your Home"*-How do you do this?
-*"Lock Up Your Poisons"*-What is considered poisonous?

! A critical mass of resources is necessary. Until this critical mass is reached, time and energy may be expanded without noticeable change. Coalitions of agencies and individuals who conduct activities related to injury control will help to build the critical mass needed.

! Integration of injury control activities into existing programs and agency structures help implement injury control activities over a sustained time-frame.

References: Micik, S, Yuwiler, J. Preventing Childhood Injuries, 2nd Edition, NCHS, San Marcos, CA; 1987.

APPENDIX B

Proven Injury and Illness Prevention Interventions

Car safety seats

Air Bags

Motorcycle helmets

Bicycle helmets

Poison prevention safety packaging

Barriers around swimming pools

Self-extinguishing cigarettes

Flame resistant sleepwear

Smoke detectors

Window bars

Handgun control

EMS Systems

Immunization

Smoking cessation

Infection Control

Safe sex

TB Prophylaxis

Control of Chronic Disease
(Diabetes, Asthma Seizures)

Adapted from:
Rivara, Fred. *Traumatic Deaths of Children in U.S.: Currently Available Prevention Strategies,* Pediatrics, 1985, 75(3);456-62.